Renewables

Homeowner Guide

Kingspan SOLAR

The Ultimate Solar Package

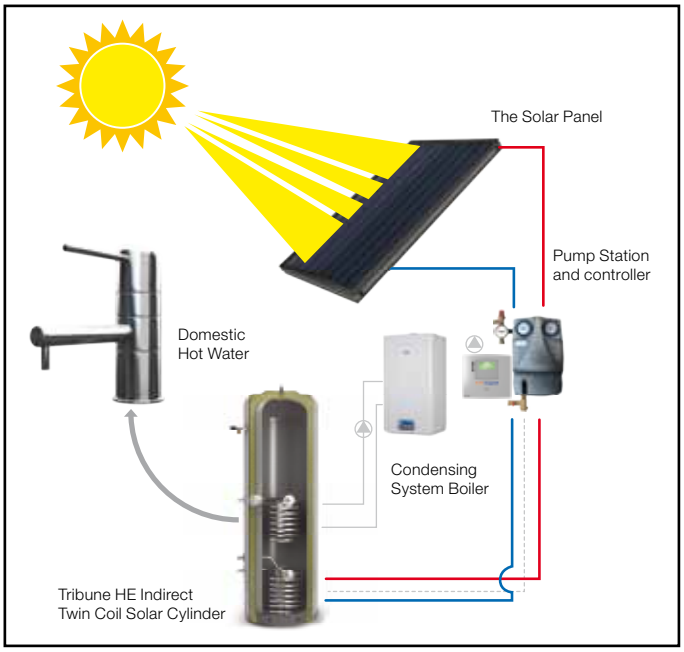
Kingspan®

Kingspan Solar Hot Water Systems

All our systems are designed to be fully automatic in operation, require no intervention by you, and are designed to provide many years of trouble-free operation.

However, please take a moment to read these notes in conjunction with our commissioning certificate and leaflets for the solar pump station and controller that we provided on installation (controller supplied will vary dependent on installation type – see page 3).

These documents should be retained for future reference (a copy of our commissioning certificate is lodged inside the solar pump station housing, providing all the details that a service engineer would require).



Panel Type

The solar system installed in your home features either Kingspan Flat Plate Solar Thermal Panels or Thermomax Vacuum Tube Solar Thermal Collectors.

Your panel type can be identified from the pictures below.

Kingspan Flat Plate Solar Thermal Panels:

- mounted either 'in-roof' or 'on-roof'

Thermomax Vacuum Tube Solar Thermal Collectors:

- can be mounted horizontally or vertically
- can be mounted on flat and sloping roofs and facades

Flat Plate Panel

Vacuum Tube Panel

Important User Information

- The solar system is automatic. The parameters within the controller are pre-set and unable to be changed.
- The system is designed to heat. The system will not be able to cool the fluid.
- The buttons on the controller are for information only. They are there to indicate the temperature of the water in the cylinder, the temperature of the fluid in the solar panels and to indicate the pump running and speed.
- The system is relatively maintenance free. The only real maintenance procedure is to check the level of glycol (antifreeze) within the system. This should be done annually by the installer or an approved organisation certified for working on solar panel systems.
- If there is a fall in pressure to 0, the installer or approved organisation should be called to check the system to re-pressurise to the normal running pressure.
- Should there be a complete breakdown of the pump station, do not attempt to repair. Call the installer or approved organisation who will assess and repair or replace as necessary.
- **Please note: The power to the solar system controller should be switched ON at all times except for short periods when the system is being serviced by an engineer. It is recommended that the solar system be serviced annually to ensure that peak performance is maintained.**

Using the Digital Controller*

South Facing: SC 100

The SC 100 solar thermal dual-circuit controller meets the requirements of modern solar energy systems' fundamental layouts. The large animated graphic display visualises the operating status and shows not only the current temperature, but also the minimum and maximum temperature values. The controller's features also include display of the operating hours and a calculated heat quantity. Pre-programmed systems and the consistent use of easy to understand pictograms guarantee that the controller is simple to operate.

Product features
- Compact, multipart designer casing
- Electronic speed control
- High level of operational safety through fault diagnosis
- Hours-of-operation logger
- Storage tank target temperature loading

Displays
- Multifunction graphical LCD display with backlighting
- Animated representation of the systems and operating states

Operation
- Multilingual menu navigation
- Side switch for manual, auto, off

Functions
- Heat quantity (determination)
- Heating return increase
- Reduction of stagnation phases
- Holiday (storage tank recooling)**
- Circulation (controlled by temperature / pulse)
- Back-up heating
- Solid fuel boiler
- Storage tank quick charge
- Thermostat
- Differential thermostat
- Interval / tube collector
- Anti-freeze
- Display storage tank top

East/West Facing: SC 200

The SC 200 controller provides everything to operate your solar thermal system safely over a long service life. It monitors and controls solar thermal systems with up to two differently oriented collector arrays and a maximum of two domestic hot water or buffer storage tanks. There are also several pool systems included. The large graphic display shows the animated control circuits, which allows you to view the operating status of each system. The clearly arranged display ensures easy operation using pictograms. Pre-programmed systems enable universal usage. The controller has five inputs for recording temperatures or pulse values and two outputs for controlling pumps or switching valves.

Product features
- Compact, multipart designer casing
- Electronic speed control
- High level of operational safety through fault diagnosis
- Hours-of-operation logger
- Software update possible
- Storage tank target temperature loading
- Daily pump start

Displays
- Multifunction graphical LCD display with backlighting
- Animated visualisation of the systems and operating status

Operation
- Multilingual menu navigation
- Side switch for manual, auto, off

Functions
- Heat quantity (Direct Sensor, pulse generator, determination)
- Heating return increase
- Reduction of stagnation phases
- Holiday (storage tank recooling)**
- Circulation (controlled by temperature / time / pulse)
- Back-up heating
- Solid fuel boiler
- Quick charge of storage tank
- Thermostat
- Differential thermostat
- Timer
- Interval / tube collector
- Anti-freeze
- Display storage tank top
- Alarm output
- Two loading zones

** This is just general information. For full guidance on how to use your controller refer to manufacturer's instructions.*
*** Please use the holiday/cooling function when going on holiday for extended periods in the summer season. Refer to manufacturer's instructions for function settings.*

Maximising Performance

While the control systems for the solar system are very sophisticated, they primarily rely on sensing temperatures in the hot water cylinder and comparing to the temperatures within the solar array on the roof. Once the control system sees a solar array temperature 7°C greater than the temperature within the lower part of the hot water cylinder, then the system pump(s) will begin to operate at an optimal speed to gather the maximum possible solar energy - when the two temperatures come within 4°C of each other then the pump(s) will cease to operate.

It is this basic concept that needs to be considered when setting up your boiler controls for any hot water heating, in order to maximise the benefit from solar energy.

In the main you should be aiming to set the hot water heating timing to not reheat hot water during the day when there is no hot water demand and there is the opportunity to gather solar energy.

For the average household where there is little hot water demand during the day, we would suggest heating hot water in the late afternoon (once the sun has had an opportunity to make its contribution) ready for the evening's demand and then again briefly in the early morning, ready for the morning demand.

Although the above should only be used as a guide, as each individual household has different hot water demand times and volumes, the overall aim is to have the water in your hot water cylinder as cool as possible going into the day (after the morning hot water demands are finished) ready for collecting the maximum solar energy.

It may take some experimentation to set this timing up, but remember it's worth it - there may be times during this experimentation when you find you have run out of hot water, but bear in mind that using your boiler timer boost facility will provide you with hot water within 10-15 minutes.

Faults and Servicing

Our systems are designed, and the components selected, to provide many years of trouble-free operation, providing that it is serviced in line with our recommendations. However, if a fault does occur it will be shown by way of a warning symbol being displayed on the solar controller. In this case, please call your original solar installer to arrange rectification.

The installer details can be found in your home owner pack. For further information, your installer can contact our technical helpline on **0845 812 0007.**

Please bear in mind that if a fault does occur, there is no risk as the safety features we have built into the system protect both the system components and the household.

The householder should not, under any circumstances, try to inspect or access solar panels mounted on the roof or at high level. This work should only be undertaken by a trained engineer with correct safety equipment for working at heights.

An annual service should be carried out to check:

a) for correct operation of safety measures (over pressure and temperature)

b) continued system and expansion vessel pressurisation

c) any faults recorded on the solar controller

d) antifreeze acidity (to be checked with a refractometer).

Every 5 years the transfer fluid within the system should be changed (if it hasn't been changed during one of annual services) to fresh transfer fluid of the same type.

Guarantee

The Ultimate Solar Package is designed for a long operational life. All components of the package carry a guarantee against faulty materials or manufacture:

- 10-year flat plate panel performance guarantee
- 5-year vacuum tube panel performance guarantee
- 2-year guarantee on other system components
- 20-year anti-corrosion guarantee on solar package

For the guarantee to be valid it is necessary that the system has been correctly installed in line with Installation Manual and Operating Instructions and all the relevant standards, regulations and codes of practice in force at the time.

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